

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS

Additional Drawing No.

(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)

Header Volume (cu.ft.)

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by Harsco Industrial Air-X-Changers, 5615 South 129th E. Ave., Tulsa, Oklahoma, 74134, USA

(Name and address of Manufacturer)

2. Manufactured for S & B ENGINEERS & CONSTRUCTORS. LTD, MONT BELVIEU, Texas, USA

(Name and address of Purchaser)

3. Location of Installation N/A

(Name and address)

4. Type HORIZONTAL

(Horizontal or vertical, tank)

17-1151-1

(Manufacturer's serial number)

N/A

(CRN)

17-1151-11

(Drawing number)

95847

(National Board number)

2017

(Year built)

5. ASME Code, Section VIII, Division 1

2015/ N/A

[Edition and Addenda, if applicable (date)]

N/A

(Code Case numbers)

N/A

(Special service per UG-120(d))

6. Shell: SA51670N

(Material spec. number, grade)

1.125 in

(Nominal thickness)

0.0625"

(Corr. allow.)

N/A

(Inner diameter)

N/A

[Length (overall)]

Body Flanges on Shells												
No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

7. Seams: Corner Joint

[Long. (welded, dbl., sngl., lap, butt)]

N/A

[R.T. (spot or full)]

N/A

(Eff. %)

1175 °F

(H.T. temp)

1.5

(Time, hr)

N/A

[Girth. (welded, dbl., sngl., lap, butt)]

N/A

[R.T. (spot or full)]

N/A

(Eff. %)

N/A

(No. of courses)

8. Heads: (a) Material

SA516 70N

(Spec. no., grade)

(b) Material

SA516 70N

(Spec. no., grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	TOP, BTM	0.625"	0.0625"	N/A	N/A	N/A	N/A	N/A	SEE REMARKS	N/A
(b)	ENDS	0.625"	0.0625"	N/A	N/A	N/A	N/A	N/A	SEE REMARKS	N/A

Body Flanges on Heads												
	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

9. MAWP 721 psi

(Internal)

-15 psi

(External)

at max. temp.

600 °F

(Internal)

350 °F

(External)

Min. design metal temp. -20 °F

at

721 psi

Hydro, pneu., or comb. test pressure

HYDRO at 1138 psi

Proof test

N/A

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
<u>IN/OUT</u>	<u>6</u>	<u>4"</u>	<u>600#RFWN</u>	<u>SA106B</u>	<u>SA105</u>	<u>SCH-160</u>		<u>Weld</u>	<u>Welded</u>	<u>Welded</u>	<u>Header</u>
<u>VENT DRAIN</u>	<u>2</u>	<u>1.5"</u>	<u>600#RFLWN</u>		<u>SA105</u>	<u>0.625"</u>		<u>Weld</u>	<u>Welded</u>	<u>Welded</u>	<u>Header</u>
<u>SOCKOLETS</u>	<u>6</u>	<u>0.75"</u>	<u>CPLG</u>		<u>SA105</u>	<u>3000#</u>		<u>Weld</u>	<u>Welded</u>	<u>Welded</u>	<u>Nozzle</u>

Additional Nozzles - See Attached U-4...

11. Supports: Skirt

N/A

(Yes or no)

Lugs

N/A

(Number)

Legs

N/A

(Number)

Other

N/A

(Describe)

Attached

N/A

(Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors, have been furnished for the following items of the report:

N/A

(Name of part, item number, Manufacturer's name and identifying stamp)

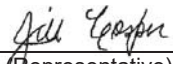
Line 6 - -Tube and Plug Dimensions OR Header Dimensions: 1.125" X 18.4375" X 15' 8"Straight length of tubes, OR, Distance between the headers: 40'HORIZONTAL SPLIT DESIGN ON FRONT HEADERTUBE & PLUG SHEET - 2 @ 1.125" X 7.125" X 188", 2 @ 1.375" X 15.0625" X 188" & 2 @ 1.125" X 18.4375" X 188"TOP & BOTTOM - 4 @ 0.625" X 3.75" X 188"TOP PLATE - 1 @ 0.625" X 3.75" X 188"BOTTOM PLATE - 1 @ 0.625" X 3.875" X 188"END PLATES - 2 @ 0.625" X 3.75" X 5.5", 2 @ 0.625" X 3.875" X 13.4375" & 2 @ 0.625" X 3.875" X

Additional Remarks - See Attached U-4...

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. "U" Certificate of Authorization Number 4241 expires December 31, 2017.

Date 10/10/2017 Co. name Harsco Industrial Air-X-Changers
(Manufacturer)

Signed 
(Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

Vessel constructed by Harsco Industrial Air-X-Changers at 5615 South 129th E. Ave., Tulsa, Oklahoma, 74134, USA

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and employed by OneCIS Insurance Company, of Lynn, MA

have inspected the component described in this Manufacturer's Data Report on September 23, 2017, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 10/10/2017 Signed  Commissions 11672, OK765
(Authorized Inspector) [National Board (incl. endorsements)]

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by Harsco Industrial Air-X-Changers, 5615 South 129th E. Ave., Tulsa, Oklahoma, 74134, USA
(Name and address of Manufacturer)

2. Manufactured for S & B ENGINEERS & CONSTRUCTORS. LTD, MONT BELVIEU, Texas, USA
(Name and address of Purchaser)

3. Location of installation N/A
(Name and address)

4. Type HORIZONTAL N/A 17-1151-1
(Horizontal, vertical, or sphere) (Tank, separator, heat exch., etc.) (Manufacturer's serial number)

N/A 17-1151-11 95847 2017
(CRN) (Drawing number) (National Board number) (Year built)

Data Report
Item Number Remarks

Additional Remarks:

16.8125"

Safety valves by others, per UG-125(a) (3) & (g)(2). Inspection Openings per UG-46(D), Exempt from Impact Testing Per: UCS-66(CURVE B & D), UCS-66(c) & UG-20(f).

Tubes: Qty 543--1"OD x .109MW x 40'long--SA214

INSP.OPENINGS: 1086, Type: 1-1/8X12UNF-Threaded, Material: SA105

Customer required - 100% X-ray Constructed in conformance with Appendix 28.

Additional nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
BODY VALVES	6	0.75"	800#		SA105			Weld	Welded	Welded	Nozzle

Certificate of Authorization: Type "U" No. 4241 Expires December 31, 2017

Date 10/10/2017 Name Harsco Industrial Air-X-Changers Signed [Signature]
(Manufacturer) (Representative)

Date 10/10/2017 Signed [Signature] Commissions 11672, OK765
(Authorized Inspector) (National Board Authorized Inspector Commission number)